CLAIMS:

1. A method for decreasing hydrogenolysis during reduction of a slurry containing an oxidized metal catalyst, comprising:

providing a slurry containing a catalyst comprising an oxidized metal and a liquid comprising organic compounds;

contacting at least a portion of the slurry with a reducing gas in a reduction vessel along with carbon monoxide in an amount sufficient to decrease hydrogenolysis of at least a fraction of said organic compounds; and

reducing at least a portion of the oxidized metal in the catalyst with at least a portion of said reducing gas to form a catalytic active catalyst.

2. The method of claim 1 wherein the reduction step is performed at a temperature between 250 and 400°C.

3. The method of claim 1 wherein the reduction step is performed at a temperature between 300 and 400°C.

4. The method of claim 1 wherein the reduction step is performed at a temperature between 350 and 400°C.

5. The method of claim 1 wherein the reducing gas contains hydrogen.

6. The method of claim 5 wherein the reducing gas has a hydrogen concentration sufficient to reduce at least a portion of oxidized catalytic metal to a catalytically active metal.

7. The method of claim 5 wherein the reducing gas further comprises at least one gas selected form the group consisting of a gaseous hydrocarbon with less than 5 carbon atoms, methane and natural gas.

8. The method of claim 1 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 5,000 ppm.

9. The method of claim 1 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 2,000 ppm.

10. The method of claim 1 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 500 ppm.

11. The method of claim 1 wherein the portion of said slurry is disposed continuously in the reduction vessel.

12. The method of claim 1 wherein the portion of said the slurry is disposed intermittently in the reduction vessel.

13. A process for activating a slurry comprising an oxidized metal catalyst and organic compounds while minimizing hydrogenolysis of said organic compounds and producing hydrocarbons from synthesis gas using said activated slurry, comprising:

(a) providing a catalyst slurry containing a catalyst and a liquid comprising organic compounds, wherein the catalyst comprises an oxidized catalytic metal;

(b) contacting the catalyst slurry to a reducing gas along with carbon monoxide in an amount sufficient to minimize hydrogenolysis of at least a fraction of said organic compounds;

(c) reducing at least a portion of the oxidized catalytic metal in the catalyst with at least a portion of said reducing gas to form a reduced catalyst and to generate an activated catalyst slurry comprising said reduced catalyst; and

(d) converting at least a portion of a gas feed comprising synthesis gas with at least a portion of said activated slurry comprising said reduced catalyst to form a product stream comprising hydrocarbons in a synthesis reactor.

14. The process of claim 13 wherein the reduction in step (c) is performed at a temperature between 250 and 400°C.

15. The process of claim 13 wherein the reduction in step (c) is performed at a temperature between 300 and 400°C.

16. The process of claim 13 wherein the reduction in step (c) is performed at a temperature between 350 and 400°C.

17. The process of claim 13 wherein the reducing gas contains hydrogen.

18. The process of claim 17 wherein the reducing gas further comprises at least one gas selected form the group consisting of a gaseous hydrocarbon with less than 5 carbon atoms, methane and natural gas.

19. The process of claim 13 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 5,000 ppm.

20. The process of claim 13 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 2,000 ppm.

21. The process of claim 13 wherein the catalyst slurry is contacted with carbon monoxide at a concentration between 1 ppm and 500 ppm.

22. The process of claim 13 wherein the reducing step is done in a reduction vessel.

23. The process of claim 22 further comprising transferring said portion of activated slurry from the reduction vessel to the hydrocarbon synthesis reactor.

24. The process of claim 23 wherein the transfer is performed while the hydrocarbon synthesis reactor is operational.

25. The process of claim 24 wherein the portion of said activated slurry is continuously added to the operational hydrocarbon synthesis reactor.

26. The process of claim 24 wherein the portion of said activated slurry is intermittently added to the operational hydrocarbon synthesis reactor.

27. The process of claim 24 wherein the transfer is performed before the hydrocarbon synthesis reactor is operational.

28. The process of claim 24 wherein the activated slurry is transferred entirely in the hydrocarbon synthesis reactor.

29. The process of claim 17 wherein the reducing step is done in the hydrocarbon synthesis reactor.

30. A method for producing hydrocarbons from synthesis gas with a catalyst slurry and regenerating a spent catalyst slurry, comprising:

reacting synthesis gas with a catalyst comprising a catalytically active metal to form hydrocarbons and product water in a synthesis reactor comprising a slurry, wherein the slurry contains said catalyst and said hydrocarbons;

converting at least a portion of said catalytically active metal to a pa oxidized catalytic metal simultaneously with reaction to form a partially deactivated slurry;

contacting at least a portion of the partially deactivated slurry with a reducing gas along with carbon monoxide in a reduction vessel in an amount sufficient to decrease hydrogenolysis of at least a fraction of said organic compounds;

reducing at least a portion of the oxidized metal in the catalyst with at least a portion of said reducing gas to a catalytic active metal to form an activated catalyst slurry; and

recycling partially or totally said activated slurry to the synthesis reactor.